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NATURAL GAS STAR PROGRAM

PARTNER UPDATE

Early Credit Legislation What's in it for Gas STAR Partners?

"Early credit" has been a topic of lively debate ever since companies began making voluntary emission reductions in the early 1990s. The issue came to the fore recently, when Senate legislation was introduced in November 1998. The bill proposed establishing a framework for granting credit to companies that reduce emissions of six greenhouse gases (GHGs) in advance of any future regulation that may be imposed.

The idea behind early credit is to ensure that companies that voluntarily reduce their emissions of GHGs are recognized for their accomplishments. And, in the event of future government regulation of these gases, companies that reduced their emissions prior to the onset of regulations should be credited for those early reductions by adding to their allowable emission baselines—eliminating what would otherwise amount to a penalty for their proactive reductions.

"The Credit for Voluntary Reductions Act of 1999 protects those companies who have decided on their own to make voluntary contributions to the general goal of climate mitigation."

Senator John Chafee (R-RI), Bill Sponsor

Supporters of the concept of early credit believe that removing any disincentive for emission reductions is critical. Private-sector innovation and initiative are key factors if market-based solutions are to be effective in lowering total US emissions of GHGs.

INSIDE

Gas STAR on the WEB

Visit the Gas STAR web site at WWW.EPA.GOV/GASSTAR

IN THE SPOTLIGHT

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Early Credit Legislation . . . What's in it for Natural Gas STAR Partners?

Sponsors of the Credit for Voluntary Reductions Act of 1999

Sen. John H. Chafee, R-RI
Sen. Connie Mack, R-FL
Sen. Joseph I. Lieberman, D-CT
Sen. John W. Warner, R-VA
Sen. Harry M. Reid, D-NV
Sen. Ron Wyden, D-OR
Sen. Susan M. Collins, R-ME
Sen. George V. Voinovich, R-OH
Sen. Daniel Patrick Moynihan, D-NY
Sen. James M. Jeffords, R-VT
Sen. Joseph R. Biden, Jr., D-DE
Sen. Max Baucus, D-MT

STAR Partners can find further information and follow the progress of the Early Credit Act by visiting the following web sites:

http://www.senate.gov/~epw/ (links to the bill and hearing statements)

http://www.pewclimate.org/report1.html (the Pew Center report on early credit)

http://www.weathervane.rff.org/features/feature060.html (Resources for the Future's views on early credit)

http://www.eia.doe.gov/oiaf/1605/frntvrgg.html (Energy Policy Act 1605(b) program homepage)

http://www.senate.gov/~mack/99releases/fact sheet.htm (information on S.547)

Further steps were taken toward instituting the idea of early credit in the form of the bill introduced in the 105th Congress in late 1998.

On March 4, 1999, Senator John H. Chafee (R-RI), Chair of the Committee on Environment and Public Works, and a bipartisan group of 11 Senators introduced a new version of the bill, the Credit for Voluntary Reductions Act of 1999 (S.547). The new bill authorizes the President to enter into binding agreements with US businesses "to provide regulatory credit for voluntary early action to mitigate potential environmental impacts from greenhouse gas emissions." Unlike the proposed 1998 "Credit for Early Action Act," the current legislation is a stand-alone bill that does not amend the Clean Air Act. Solid bipartisan support for S.547, combined with President Clinton's clear commitment to the idea of early credit expressed in his January 1999 State of the Union Address, indicate that early credit is likely to become one of the top environmental issues of 1999.

Commenting on the bill's introduction, Sen. Chafee said, "Companies that have taken, or are interested in taking, voluntary steps to reduce or sequester greenhouse gases have asked us to provide legal assurance that such actions would count 5, 10, or 15 years from now in the event that the United States decides to establish a regulatory program to combat global climate change."

What does S.547 Propose?

The Credit for Voluntary Reductions Act of 1999 was developed during months of dialog among lawmakers, industry, and environmental groups. Under the proposed legislation, companies taking actions before 2008 that reduce methane, CO_2, or other GHGs would be eligible for early credits. Firms could save the credits and use them to meet future emission limits that may be set, or sell them to others for use under a future emissions trading system.

Of particular interest to Natural Gas STAR Partners, the Senate bill includes a provision for retroactive credit. Under this provision, credits would be granted for emission reductions achieved since 1990 and reported under the federal voluntary programs of the Climate Change Action Plan—such as Natural Gas STAR—or reported under the Energy Policy Act's 1605(b) program. According to the bill, these reductions must represent actual reductions in GHG emissions or actual increases in net carbon sequestration. The reductions must be verifiable, reported accurately, and not double-counted.

Participants in an early credit program would agree to permit a qualified independent third party to annually measure, track, and publicly report GHG emissions.

How Can STAR Partners Prepare for an Early Credit Program?

- ✓ Ensure that all emission reduction actions taken by your company are included in your annual Natural Gas STAR report.
- ✓ Make annual reports as complete and clear as possible. Include calculations, default values, and any assumptions used in calculating your reported reductions. If you have taken direct measurements, use those instead of program default values.
- ✓ Identify and report historical methane emission reductions—regardless of when you joined the Natural Gas STAR Program—because retroactive credits could be granted for reductions achieved since 1990.
- ✓ Review the Best Management Practices and Partner Reported Opportunities to determine whether you have made, or could undertake, additional emission reductions to earn credit.
- ✓ Keep records of any equipment purchases, retrofits, or other activities that may help verify your emission reductions later.
- ✓ Share information about successful methane reduction measures with EPA and STAR Partners.

The Coming Debate Supporters and Critics

As with any environmental legislation, the Credit for Voluntary Reductions Act of 1999 has sparked extensive debate. All factions are concerned about ensuring accurate and verifiable emission reductions. Nevertheless, endorsements from the bipartisan group of co-sponsoring Senators, environmental groups such as the Environmental Defense Fund, and industry groups such as the International Climate Change Partnership indicate the strong support that exists for early credit legislation.

In a January 3rd *New York Times* article about the anticipated early credit bill, Eileen Claussen, Executive Director of the Pew Center on Global Climate Change, stated, "This is a potential winner. It helps get the United States moving. It is voluntary. It is supported by industry. It seems to me there should be a way to get legislation like that through Congress." Through the Pew Center, major companies and other organizations are working together to educate the public on the risks and challenges of climate change and potential cost-effective solutions. Shell International, Enron Corporation, and BP Amoco are among the members of the Business Environmental Leadership Council, which spearheads the Center's efforts. Shell, Enron, and BP Amoco are also Natural Gas STAR Partners.

Industry is not, however, unanimous in supporting early credit legislation. Some industry representatives worry that passage of any early credit bill would generate more support for the Kyoto Protocol, which the Senate has not ratified. In their view, supporting early credit would be seen as general acceptance that a regulatory limit on greenhouse gases is necessary. Senator Connie Mack (R-FL), a critic of the Kyoto Protocol but a sponsor of early credit legislation, disagrees. In his view, "S.547 is the best approach until we know more about the exact causes of global warming and how greenhouse gas emissions will be regulated."

"The least our government can do is protect those companies that make voluntary contributions to the general goal of climate mitigation."

Sen. John H. Chafee

Follow the Debate

Lobbying for alterations to the Credit for Voluntary Reductions Act of 1999 has already begun. Senator Chafee's Committee on Environment and Public Works began hearings on the Act on March 24. Through this *Update* and other periodic bulletins, the Natural Gas STAR team will keep STAR Partners informed of the continuing developments with S.547 or other domestic legislation that affects whether and how they receive credit for voluntary reductions in methane emissions.

NATURAL GAS STAR NEWS

GPM Gas Corporation Joins STAR as Charter Gas Processing Sector Partner

GPM Gas Corporation recently announced its decision to join the Natural Gas STAR Program. As the first gas gathering and processing company to join STAR, GPM is leading the way for the gas processing sector to realize the economic and environmental rewards that STAR offers. GPM believes that as a distinct industry sector, gas gatherers and processors will benefit from the STAR Program's profitable methane emission reduction opportunities recommended for both the production sector and the transmission and distribution sectors.

"We share EPA's concern for and commitment to reducing methane emissions," says GPM Safety & Environmental Manager Les McMillan. "We look forward to leading the gas gathering and processing industry in this new sector of membership."

Houston-based GPM has one of the largest gas gathering infrastructures in the industry. With four operating regions in New Mexico, Oklahoma, the Texas-Panhandle, and West Texas, GPM owns, operates, or has an interest in 16 processing plants and more than 28,000 miles of gathering lines. GPM processes approximately 1.8 billion cubic feet per day of raw natural gas and markets one billion cubic feet per day of natural gas to local distribution companies, utilities, industrial consumers, and marketers. GPM is also one of the largest domestic producers of natural gas liquids, producing 170,000 gross barrels per day. GPM is a subsidiary of Phillips Petroleum Company.

GPM Gas Corporation's mission is ". . . to be recognized as the best natural gas gatherer, processor, and marketer in the industry." We are proud to welcome this spirit of leadership and enthusiasm to the Natural Gas STAR Program!

STAR Welcomes Two New Transmission Partners

Koch Gateway Pipeline Company

Koch Gateway operates the largest gas transmission system in the south Gulf with over 10,000 miles of interstate pipeline and more than 120 interconnects. The Koch facilities are located in the most productive natural gas fields in the continental United States, facilitating collection, transportation, and storage services to cities, utilities, and major industries throughout the Gulf states and points north.

Founded in the 1930s, Koch has its headquarters in Houston, Texas. Operating 33 compressor stations, the company is connected with major interstate pipelines serving the northeast, midwest, and southeast.

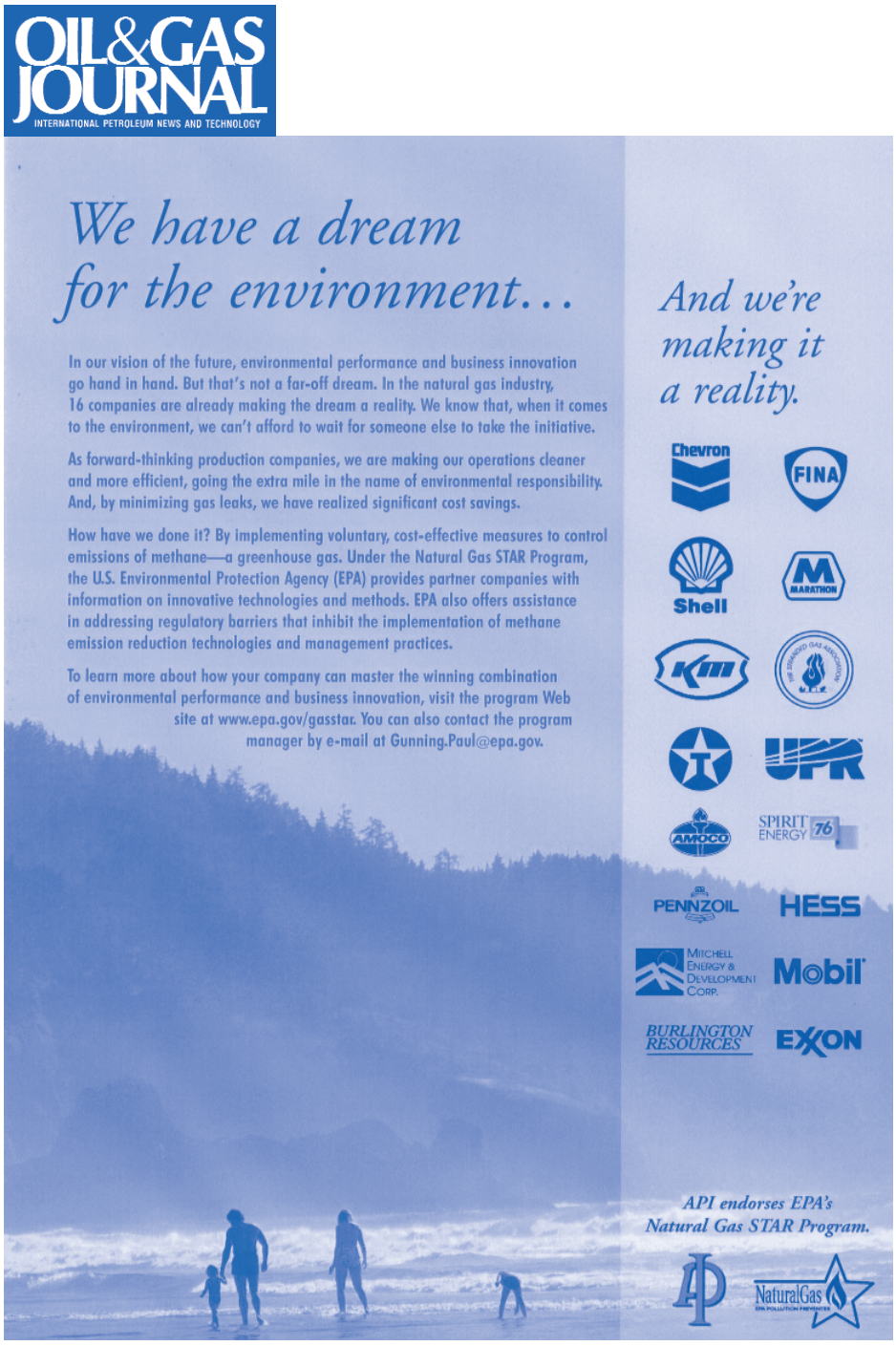
Williams Gas Pipeline Central

With more than 27,000 miles of pipeline, Williams is the nation's largest volume transporter of natural gas. The company has five natural gas pipelines stretching from coast-to-coast, transporting 16 percent of all natural gas in the United States. Founded in 1908, Williams has its headquarters in Tulsa, Oklahoma.

Williams Central is the third of the company's five pipelines to become a STAR Partner. The company joins Transco, a 10,500-mile transport system serving markets in the east and southeast, and Texas Gas Transmission, serving the southeast and midwest with 6,100 miles of pipeline. Central's system of over 6,000 miles provides gas from Kansas, Oklahoma, Texas, Wyoming, and Colorado to markets in the mid-continental United States.

The American Petroleum Institute (API) is the major national trade association representing the entire petroleum industry: exploration and production, transportation, refining, and marketing. With headquarters in Washington, DC, and petroleum councils in 33 states, API is a forum for all parts of the oil and natural gas industry to pursue priority public policy objectives and to advance the interests of the industry.

API has been an active endorser of the Natural Gas STAR Program since 1996. To recognize STAR Producer Partners and promote their program achievements, API generously sponsored a full-page, full-color public service announcement (PSA) in the November 9, 1998 issue of the *Oil and Gas Journal*.



Staff Changes in the Natural Gas STAR Program

Rhone Resch, Natural Gas STAR Program Manager, left EPA in late 1998 to take a position as Director of Utility Regulation and Environmental Affairs for the Natural Gas Supply Association. We wish him well! Recently joining the STAR team is Carolyn Henderson. Ms. Henderson and Program Manager Paul Gunning will continue to make the STAR Program an effective partnership between EPA and the natural gas industry.

STAR PROFILES

Brooklyn Union: Special Achievement Award

On January 22, 1999, EPA presented Bob Preusser, retired Vice President and Chief Engineer of Brooklyn Union Gas, with a Special Achievement Award in honor of his strong support of the Natural Gas STAR Program. Kimberly Denbow of the American Gas Association was present with EPA staff to congratulate Mr. Preusser.

Bob Preusser was a vital supporter of EPA in developing the Natural Gas STAR Program as an innovative industry/government partnership. He worked hard to gain industry buy-in for the program's goals and secure active participation. When EPA Administrator Carol Browner launched Natural Gas STAR in 1993, Bob was present at the ceremony along with several other industry representatives. His leadership over the years motivated Brooklyn Union and other natural gas distributors to embrace the environmental, economic, and safety opportunities offered by Gas STAR's Best Management Practices.

Bob Preusser (r) receives Special Achievement Award from STAR Program Managers, Paul Gunning (c) and Carolyn Henderson (l).

In response to his surprise award, Bob noted the STAR Program's achievements, in particular its success in demonstrating that voluntary efforts can result in significant emission reductions. He further stressed the importance of maintaining the spirit of partnership between EPA and the natural gas industry.

"The most important message of the Natural Gas STAR Program is that regulators and industry can work together effectively to solve problems.

The real enticement of the program is that it emphasizes cost-effective solutions as opposed to solutions at any cost."

Robert Preusser,
VP and Chief Engineer
Brooklyn Union Gas
1997

The New York State Energy Research and Development Authority (NYSERDA), Natural Gas STAR's newest endorser, is a public benefit corporation providing technical and financial assistance to businesses, municipalities, and residents of New York to help them meet their energy and environmental needs. Through its research and development program, NYSERDA seeks to:

- Promote energy efficiency and the development of new energy and environmental technologies to encourage economic growth in New York;
- Reduce or mitigate adverse environmental effects associated with energy production and use; and
- Expand the use of the state's indigenous and renewable energy resources.

In 1998, NYSERDA was awarded a grant from EPA to develop a well efficiency program focused on the natural gas production sector. Working with Advanced Resources International, a petroleum exploration and engineering services firm, NYSERDA is developing a prototype system of well improvements that increases overall efficiency and reduces methane emissions. The prototype system will be applied at test sites in four gas-producing regions of the United States, focusing on small and mid-size independent producers. By selecting test sites in distinct regions, NYSERDA hopes to capture regional differences in operations that may be a factor in optimizing well efficiency and emission reductions.

Enron: Transmission Partner of the Year

Enron was honored as the 1997 Natural Gas STAR Transmission Partner of the Year during an awards ceremony at the 5th Annual Implementation Workshop in October 1998. For the second year in a row, Enron was recognized for outstanding contributions to the STAR Program in the areas of technology development, outreach, and program implementation. From 1993 to 1997, Enron reduced methane emissions by over 1.8 Bcf, worth more than $3.7 million.

Building on earlier initiatives, Enron expanded its participation in the EPA/GRI/PRC Leak Detection and Repair Program during 1997. More than 100 stations in Enron's Environmental Transportation & Storage Division and 52 stations in its Gulf Coast Operations were surveyed using the Hi-Flow™ Sampler to take direct volumetric leak measurements. In 1997, Enron realized emission reductions of 303 MMcf and a net profit of $265,000 through its leak repair program.

Michael Terraso (l), VP Environment, Health, and Safety, Enron Gas Pipeline Group, and Mark Phillips (r), Manager, Enron Gas Pipeline Group, accept the Transmission Partner of the Year award from Natural Gas STAR Program Manager Paul Gunning (c).

In addition to leak detection and repair work, Enron has actively implemented Best Management Practices, resulting in 1997 reductions of 887 MMcf, nearly double the annual reductions for 1996.

Topping its exemplary 1997 performance, Enron recently submitted its 1998 report to STAR. The report shows 1998 annual methane emission reductions of 2.4 Bcf, bringing Enron's total program reductions to 4.3 Bcf.

Enron has been instrumental in identifying several new Partner Reported Opportunities (PROs) for emission reductions. These include (1) installing 3-phase separators on dehydrator reboilers, (2) replacing engine gas starters with air starters, and (3) lowering pipeline pressure prior to maintenance. Enron helped EPA expand the third PRO into a Lessons Learned Summary by providing critical data to the engineering assessment and serving as a technical reviewer of the draft.

To assist with STAR Program outreach, Enron has given presentations at industry conferences, such as the Southern Gas Association Environmental Conference, and at EPA workshops. The firm has actively encouraged technology transfer by organizing facility site visits. In October, participants at the Houston workshop toured Enron's Bammel Storage Field and worked hands-on with the Hi-Flow™ Sampler to measure leak rates from various components.

Enron's gas pipeline group operates 32,000 miles of high-pressure pipeline in six companies across the United States—Northern Natural, Transwestern, Florida Gas, Louisiana Resources, Northern Border, and Houston Pipeline.

Brooklyn Union: Distribution Partner of the Year

Bill Ireland (cl), Business Manager, Brooklyn Union, and Joe D'Emidio (cr), EDS Coordinator, Brooklyn Union, accept the Distribution Partner of the Year award from Natural Gas STAR Program Manager Paul Gunning (r) and former STAR Program Manager, Rhone Resch (l).

Brooklyn Union, a Charter Partner of the Natural Gas STAR Program, was named Distribution Partner of the Year at the 5th Annual Implementation Workshop in Houston, Texas. Brooklyn Union was honored for superior program implementation, and for outstanding contributions in the areas of outreach and promotion of the STAR Program's economic, safety, and environmental benefits.

Since joining in 1993, Brooklyn Union has continued to achieve impressive results through implementing the Natural Gas STAR Program. The company's 1997 annual methane reductions show an increase of 33 percent over 1996 reductions, bringing Brooklyn Union's total program reductions to date to 72,000 Mcf, valued at almost $150,000.

Brooklyn Union has consistently implemented the core Best Management Practices (BMPs) of directed inspection and maintenance at gate stations and surface facilities, repair and replacement of leaky pipe, and replacement of high-bleed pneumatics with low- and no-bleed varieties. In addition, Brooklyn Union has identified several Partner Reported Opportunities (PROs). These include (1) reducing venting from liquid receiver tanks, (2) installing over-pressurization protection systems on aboveground gate stations, and (3) flaring instead of venting when retiring low pressure gas holders. In 1998, Brooklyn Union continued to achieve additional emission reductions by implementing STAR BMPs.

Brooklyn Union's Gas STAR achievements extend beyond impressive gas savings. Through numerous outreach activities, the company has helped spread the word about the economic and environmental benefits of becoming a STAR Partner. Brooklyn Union has worked with EPA to develop outreach materials and journal articles, has spoken about the program to industry peers, and features its participation in the STAR Program prominently on the company web site.

As a member of the American Gas Association's Environmental Committee, Brooklyn Union has helped shape the Natural Gas STAR Program since its inception. According to Brooklyn Union's Chief Environmental Officer, participating in the program has demonstrated that "voluntary arrangements can be just as effective as regulation, and achieved at a fraction of the cost."

In 1998, Brooklyn Union joined forces with Long Island Lighting Co. and reorganized under the umbrella Keyspan Energy. The company provides natural gas services to 1.57 million customers in the New York City boroughs of Brooklyn, Queens, and Staten Island, and in Nassau and Suffolk Counties on Long Island.

Mobil Exploration and Producing US:
Producer Partner of the Year

EPA recognized Mobil Exploration & Producing U.S., a division of Mobil Corporation, as the 1997 Natural Gas STAR Producer Partner of the Year. The company was honored for significant methane emission reductions, for furthering industry knowledge in emission-reducing technologies, and for major outreach contributions to the STAR Program.

Mobil has been an active participant in the Natural Gas STAR Producer Program since becoming a Charter Partner in 1995. The firm reported approximately 946 MMcf in reductions in 1997, bringing Mobil's cumulative reported methane emission reductions from 1990 to 1997 to 2.5 Bcf. With recently reported 1998 reductions, Mobil's cumulative total jumps to over 3 Bcf.

Mobil has exceeded its partnership obligations to consider and implement core BMPs by investigating and reporting on several Partner Reported Opportunities (PROs). These include (1) installing vapor recovery units on storage tanks, (2) converting to or installing instrument air systems, and (3) installing plunger lifts in gas wells. Mobil has installed plunger lifts in 19 gas wells as a pilot project in the company's Wyoming Big Piney field. The plunger lift systems have annualized gas savings of over 12,000 Mcf, with a value increase of $1,280 per well prior to including incremental gas production benefit. Based on these experiences, Mobil assisted with the development of a new Lessons Learned Summary, to be published by EPA later this year.

Mobil continued its innovative methane emission reduction practices in 1998. The company installed flares to burn tank and blowdown vapors, installed instrument air compressors, added a vapor recovery unit, and implemented diverse measures to reduce or eliminate flaring without increasing emissions.

Mobil's commitment to the Natural Gas STAR Program has also included active involvement in many outreach and technology transfer activities. Bill Fishback, Mobil's Implementation Manager for the STAR Program, showcased Mobil's implementation activities at the Regional Producer Technology Transfer Workshop in Denver in 1998 and at the Houston Implementation Workshop. Mobil has also assisted EPA in developing Natural Gas STAR outreach materials, Lessons Learned Summaries, and journal articles, and in communicating the benefits of the program to non-partner companies.

Bill Fishback (l), Air Compliance Consultant, Mobil Business Resources, Inc., accepts the Producer Partner of the Year award for Mobil from the Natural Gas STAR Program Manager Paul Gunning (r).

PROGRAM TOOLS AND ACTIVITIES

HOT OFF THE PRESS

Lessons Learned Summaries

EPA will develop three new Lessons Learned Summaries in 1999, based on the most promising and widely relevant Partner Reported Opportunities (PROs). EPA will solicit partners' input on the choice and development of the three studies, asking you to complete a survey to help select the PROs that offer the most cost-effective emission reduction opportunities applicable to your operations. These new studies will add to the bank of Lessons Learned already developed for most of STAR's core BMPs and for several PROs.

The following Lessons Learned Summaries will soon be available to interested partners:

Replacing Gas-Assisted Glycol Pumps with Electric Pumps

Installing Plunger Lift Systems in Gas Wells

Using Pipeline Pump-Down Techniques To Lower Pipeline Pressure Before Maintenance

Use the Order Form on Page 15 to receive your copies.

Benchmarking

Recently, the Natural Gas STAR Program launched a performance benchmarking project. Company-specific benchmarking reports will allow STAR Partners to easily review their program accomplishments and to compare their emission reduction efforts to those of the leading companies in their respective sectors. EPA's benchmarking process will provide partner companies with the following:

- Data for comparing their methane reduction performance with that of leading partners and with the industry average.
- Information on the BMPs that are producing the best reductions.
- EPA emission reduction records for verification against company records.
- A succinct summary of accomplishments to use in communicating their success.

If you or your company would like to be involved in advising the benchmarking process, please contact STAR Program Manager Paul Gunning at 202/564-9736 or by e-mail at gunning.paul@epa.gov.

Videos

Be on the lookout for Natural Gas STAR Program camera crews in 1999. EPA is developing two short videos to facilitate partners' implementation efforts. One video will focus on the production sector, the other on the transmission and distribution sectors. To be produced in collaboration with STAR Partners on site, these videos will be another tool for implementation managers to use as they educate employees and encourage implementation of STAR Best Management Practices. The videos will be released in the fall.

Superior Implementation Case Studies

To supplement the technical information that EPA provides STAR Partners, the STAR Program is now developing Implementation Case Studies. These studies will highlight the methods used by successful partner companies to promote and implement Natural Gas STAR. In particular, the 4-page case studies will explain how successful partners have addressed and overcome administrative and organizational barriers to joining STAR, to implementing its Best Management Practices, and to motivating employees. The case studies will provide valuable information—based on actual company experience—to current program partners and prospective partners alike.

Partner Reported Opportunities

Partner Reported Opportunities (PROs) are emission-reducing technologies and practices that can be implemented and reported in addition to the core Best Management Practices (BMPs) recommended by the program. They may be new or ongoing initiatives, which STAR Partners identify in their operations and then briefly describe with resulting emission reductions in their annual reports to STAR.

Voluntary reductions from PROs are significant, now accounting for 64 percent of reductions reported by production partners and 44 percent of reductions reported by transmission and distribution partners.

In 1998, EPA described 45 PROs in fact sheets featuring operational, economic, and emission reduction data. Each PRO Fact Sheet:

- describes the technology or practice,
- discusses its emission reduction potential,
- presents frequency of application,
- suggests benefits and drawbacks, and
- provides sources of information, and lists ranges for cost, methane reductions, and years to payout.

You can use the new fact sheets to determine whether these PROs could apply to your operations. EPA encourages all STAR Partners to identify and implement PROs in their operations, and to include these additional emission reductions in their annual reports.

EPA will soon put the series of PRO Fact Sheets on line. The reports will be part of a searchable database easily accessible from the Natural Gas STAR web site at www.epa.gov/gasstar.

Sample PROs:

Install Instrument Air System

Install Downhole Separator Pumps

Use a Recycle Line To Recover Gas During Condensate Loading

Use Smart Regulators

Modify Station and Compressor Shutdowns

Producer Technology Transfer Workshops

EPA will continue to co-sponsor technology transfer workshops in 1999. Four workshops will be held in major oil and gas production areas, in cooperation with state or regional oil and gas associations. Workshop participants will receive up-to-date information on methane reduction technologies and practices, as well as information on the STAR Program. Technical and cost issues associated with various Best Management Practices and Partner Reported Opportunities will be discussed.

This year, we are planning to hold four workshops in the following regions:

- Bakersfield, California
- New Orleans/Lafayette, Louisiana
- Midland, Texas
- Casper, Wyoming

Watch for dates and registration information in the next edition of the partner *Update*, or check the STAR web site for more information.

STAR Web Site

The Natural Gas STAR web site is an on-line source for STAR Program information, implementation tools, emission reduction reports, and more. From the site, you can easily view or download valuable tools such as the Lessons Learned Summaries, Decision Support Software, and, soon, fact sheets on over 45 Partner Reported Opportunities. The site also has links to the web sites of STAR Partners and Endorsers. For up-to-date information, visit the STAR web site frequently at

http://www.epa.gov/gasstar

WORKSHOP SUMMARY

The 5th Annual Natural Gas STAR Implementation Workshop

In summary, Texaco's GHG reduction efforts are "simply driven by good business sense, recovering product, saving money, enhancing value through innovative technology, and managing emissions while Texaco provides the energy that the world needs."

Arthur Lee
Environmental Technical Coordinator, Texaco International Production

With generous co-sponsorship from endorsers—the American Gas Association, the American Petroleum Institute, and the Interstate Natural Gas Pipeline Association of America—EPA held the 5th Annual Natural Gas STAR Implementation Workshop in Houston, Texas. Seventy participants representing 23 STAR Partner companies, five endorsing organizations, and eight prospective partners participated in the October 1998 workshop.

The workshop focused on how partners can maximize efficiency gains, gas savings, and economic and environmental benefits through the STAR Program. It provided a forum to:

- highlight the accomplishments of the STAR Program and program partners,
- present new tools for program implementation,
- network with peers, and
- discuss new technologies and practices.

The 1998 workshop showcased the gas industry's experiences in implementing the STAR Program. In sector-specific breakout sessions, partners and STAR Program Managers discussed specific information on how to improve the implementation of Best Management Practices (BMPs). EPA presented new implementation tools that are useful for new STAR Partners and long-time partners alike.

Technology Transfer Through Industry Experience

Sharing companies' experiences with specific emission reduction techniques and practices is critical to the technology transfer goals of the STAR Program. At the workshop, partners led interactive sector-specific discussions on program implementation.

Texaco and Mobil led the session for production partners. Michael Milliet of Texaco described Texaco's Gulf Coast emission reduction program that concentrates on pneumatic devices and use of flash tanks in glycol dehydrators. With the flash tanks alone, Texaco has saved 300 MMcf of methane, worth about $600,000. Texaco now plans to expand the STAR Program to all domestic operations.

Vernon Schievelbein then presented the *Guidance Document for Texaco's Greenhouse Gas (GHG) Emission Inventory*, outlining the methodology Texaco business units use to compile accurate GHG emissions data. The inventory effort is an important component of Texaco's three-point stance on climate change, which includes developing new market opportunities for clean, efficient energy; assessing company-wide emissions; and

participating in the global dialog on climate change. Arthur Lee, co-author of the Texaco document, summed up Texaco's efforts as "simply driven by good business sense, recovering product, saving money, enhancing value through innovative technology, and managing emissions while Texaco provides the energy that the world needs." Mr. Lee is Environmental Technical Coordinator for Texaco International Production.

Bill Fishback of Mobil Oil's Exploration and Producing Division U.S. summarized Mobil's emission reduction projects undertaken with the STAR Program. Implementing core BMPs as well as PROs, such as installing plunger lifts in 19 wells in a Wyoming gas field, Mobil has realized impressive annual methane reductions of 1.3 Bcf and total program reductions of over 3 Bcf.

Enron and Brooklyn Union led the session for transmission and distribution partners. Enron's Marc Phillips highlighted Enron's progress in implementing the STAR Program, including participation in Indaco Air Quality's Hi-Flow™ Sampler program. This program uses a volumetric measurement device that allows operations personnel to accurately measure leak volumes and prioritize leak repair.

Bill Ireland and Joseph D'Emidio of Brooklyn Union reported on their efforts to reduce gas released from aboveground gate stations in coordination with a station instrumentation replacement program. In this pilot project, Brooklyn Union redesigned five flow control stations and a pressure control station, eliminating the venting of 3.8 MMcf of methane annually.

Workshop Highlights

Getting Involved in the Climate Change Debate

Michael Terraso of Enron Gas Pipeline Group delivered the workshop's keynote address, providing an industry perspective on climate change. Mr. Terraso presented Enron's proactive stance on the issue, which includes participation on the Pew Business Environmental Leadership Council and participation in the STAR Program. Mr. Terraso also discussed the role the natural gas industry may play in helping the United States meet its climate change goals. This position emphasizes expanding natural gas markets, promoting an early credit system, participating in emissions trading, and expanding the Interstate Natural Gas Association of America (INGAA) member company reduction programs.

Sarah Wade of the Environmental Defense Fund echoed this theme in a second keynote address, which focused on the importance of early emission reductions as a critical ingredient to cost-effective climate policy.

Verification and Annual Reporting Study

To help partners ensure that emission reductions reported to STAR are credible and fully verifiable, EPA has undertaken a study of reporting accuracy. The assessment of sources of uncertainty in partners' 1996 and 1997 annual reports showed that mathematical and data transfer errors were insignificant. The greatest source of uncertainty was insufficient documentation. In 60 percent of the reports reviewed, partners elected to use default methodologies, and methodology application errors were less than 10 percent. Examples of reporting errors and recommendations for improving reporting were discussed.

Bammel Storage Field Site Visit

The workshop culminated in a field trip to Enron's Bammel Field Storage Facility. The 1000-acre facility features 15 gas-driven compressors, 45 injection and withdrawal wells, four dehydration stations, and gathering lines. Partners were given the opportunity to observe and get hands-on practice using the Hi-Flow™ Sampler, developed under the EPA/GRI/PRC Leak Mitigation Program, to measure leak rates from various aboveground components at the facility.

Lessons Learned Summaries

Draft Lessons Learned Summaries based on three PROs were presented and discussed. They were (1) Improvements to the Use of Gas-Assisted Glycol Pumps, (2) Installing Plunger Lifts in Gas Wells, and (3) Using Pipeline Pump-Down Techniques To Lower Gas Line Pressure Before Maintenance. We thank all of the partners who provided feedback and contributed to the development of these documents. The finished reports will be released soon.

The 6th Annual STAR Implementation Workshop will be held in Houston, October 6-9, 1999. Call STAR for more information at 202/564-9736 or 202/564-2318.

GAS STAR ACHIEVEMENTS

Thank You, One and All

1998 was a challenging year for the oil and gas industry. Despite low oil prices and a dynamic industry environment, Natural Gas STAR Partners have continued to seek and implement innovative, cost-effective means to profitably and voluntarily reduce their emissions of greenhouse gases. Through the STAR Program, natural gas producers, transporters, and distributors have proven that government-industry partnerships can be a major force in lowering US greenhouse gas emissions. Partners have achieved cumulative methane reductions totaling over 55 Bcf, exceeding the Climate Change Action Plan (CCAP) goals every year through 1997. We are now reviewing 1998 reports and will publish these accomplishments soon. We thank all of our partners and endorsers for your dedication to the economic and environmental goals of the STAR Program.

Transmission & Distribution Partners

ANR Pipeline Company ◆ Atlanta Gas Light Company ◆ Baltimore Gas and Electric Company ◆ Bay State Gas Company ◆ Brooklyn Union ◆ Central Hudson Gas & Electric Corporation ◆ Citizens Gas & Coke Utility ◆ Colorado Interstate Gas Company ◆ Columbia Energy Group Distribution Companies (5) (Columbia Gas of KY, MD, OH, PA, VA, Inc.) ◆ Consolidated Edison Company of New York, Inc. ◆ Consumers Energy ◆ Conectiv Power Delivery ◆ El Paso Natural Gas Company ◆ Enron Corporation ◆ Equitable Resources, Inc. ◆ Granite State Gas Transmission, Inc. ◆ Great Lakes Gas Transmission Company ◆ Iroquois Gas Transmission System ◆ Kansas Operating Pipeline Company ◆ Koch Gateway Pipeline Company ◆ Louisville Gas & Electric Company ◆ Michigan Consolidated Gas Company ◆ MidCon Texas Pipeline Corporation ◆ Minnegasco ◆ Natural Gas Pipeline Co. of America ◆ New York State Electric & Gas Corporation ◆ Niagara Mohawk Power Corporation ◆ Northern Indiana Public Service Company ◆ Northern Utilities, Inc. ◆ Northwest Natural ◆ Orange and Rockland Utilities, Inc. ◆ Pacific Gas and Electric Company ◆ PECO Energy Company ◆ Public Service Company of North Carolina, Inc. ◆ Public Service Electric and Gas Company ◆ Rochester Gas & Electric Corporation ◆ South Carolina Electric & Gas Company ◆ Southern California Gas Company ◆ Southern Natural Gas Company ◆ Southwest Gas Corporation ◆ Superior Water, Light and Power Company ◆ Tennessee Gas Pipeline ◆ Texas Gas Transmission Corporation ◆ UGI Utilities, Inc. ◆ Washington Gas ◆ Williams Gas-Central ◆ Williams-Transco ◆ Wisconsin Public Service Corporation

Production Partners

Amerada Hess Corporation, U.S. Exploration and Production ◆ BP Amoco ◆ Burlington Resources ◆ Chevron U.S.A. Production Company ◆ Exxon Company, U.S.A. ◆ FINA Oil and Chemical Company ◆ Kerr-McGee Corporation ◆ Marathon Oil Company ◆ Mitchell Energy and Development Corp. ◆ Mobil Exploration and Producing U.S. Inc. ◆ Pennzoil Exploration and Production Company ◆ Shell Exploration and Production Company ◆ Spirit Energy 76, A Business Unit of Unocal ◆ Texaco ◆ The Stranded Gas Association, Inc. ◆ Union Pacific Resources

Processing Partner

GPM Gas Corporation

Endorsers

American Gas Association (AGA) ◆ American Petroleum Institute (API) ◆ Gas Research Institute (GRI) ◆ International Centre for Gas Technology Information (ICGTI) ◆ Interstate Natural Gas Association of America (INGAA) ◆ National Association of Regulatory Utility Commissioners (NARUC) ◆ Natural Gas Supply Association (NGSA) ◆ New York State Energy Research and Development Authority (NYSERDA) ◆ Southern Gas Association (SGA)

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Please fax to your STAR Service Representative or directly to the Natural Gas STAR Program at 202-565-2077.

PLEASE INDICATE WHICH MATERIALS YOU WOULD LIKE TO RECEIVE:

LESSONS LEARNED

_____ 1. Directed Inspection and Maintenance at Compressor Stations
_____ 2. Directed Inspection and Maintenance at Gate Stations and Surface Facilities
_____ 3. Options for Reducing Methane Emissions from Pneumatic Devices in the Natural Gas Industry
_____ 4. Installation of Flash Tank Separators
_____ 5. Reducing Methane Emissions from Compressor Rod Packing Systems
_____ 6. Reducing Emissions When Taking Compressors Off-Line
_____ 7. Installing Vapor Recovery Units on Crude Oil Storage Tanks
_____ 8. Replacing Wet Seals with Dry Seals in Centrifugal Compressors
_____ 9. Reducing the Glycol Circulation Rates in Dehydrators
_____ 10. Replacing Gas-Assisted Glycol Pumps with Electric Pumps
_____ 11. Installing Plunger Lift Systems in Gas Wells
_____ 12. Using Pipeline Pump-Down Techniques To Lower Pipeline Pressure Before Maintenance

STAR IMPLEMENTATION TOOLS

_____ Decision Support Software
_____ Decision Support Software Manual

OUTREACH MATERIALS

_____ Natural Gas STAR Program Brochure
_____ Natural Gas STAR Marketing Package
_____ Natural Gas STAR Promotional Toolkit
_____ STAR Partner Update, Summer 1998

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